Triggered Star Formation and Evolution of T-Tauri Stars in and around Bright-Rimmed Clouds

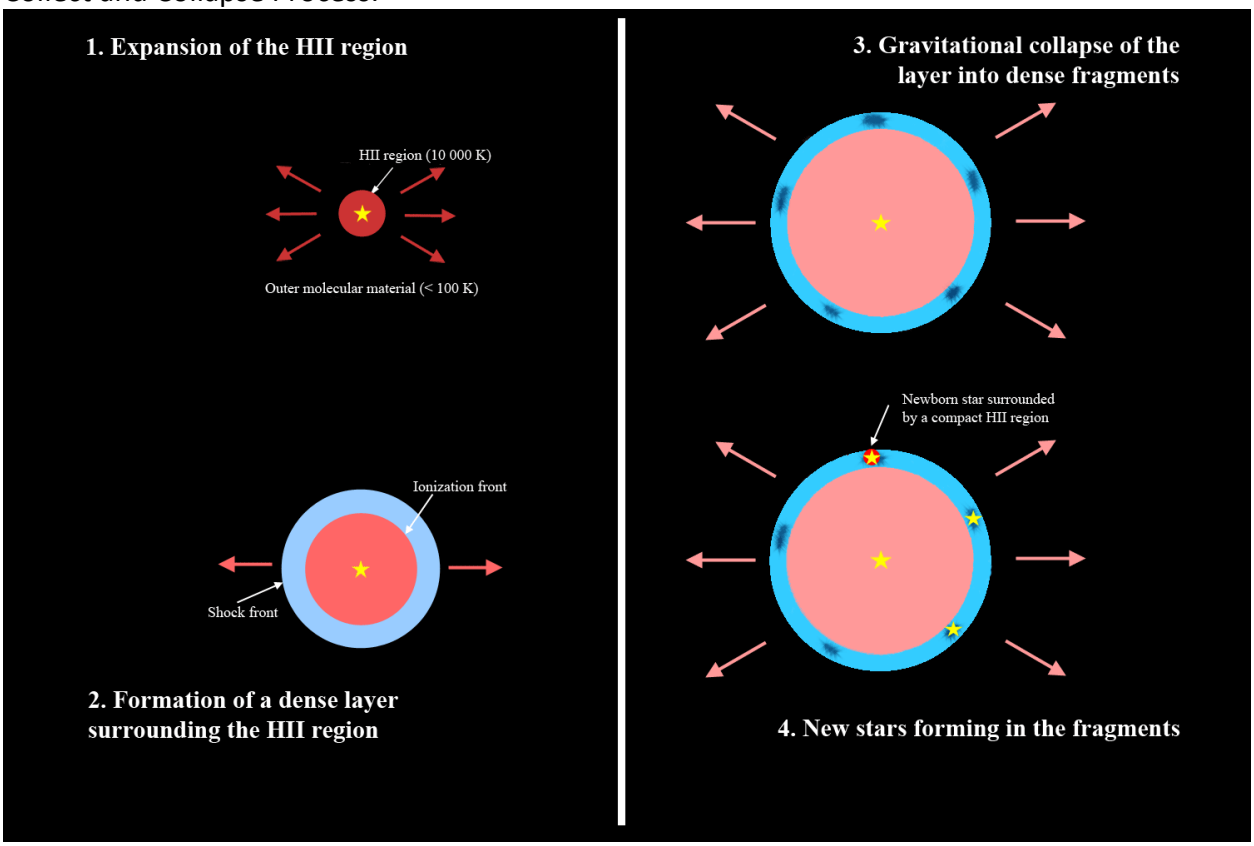
Chauhan, *et al*. March 2009

Key Ideas:

Wanted to test the small-scale sequential star formation hypothesis in a few BRCs. To do this, they needed to identify YSO stars (specifically focused on older, weak-line T-Tauri stars and younger, classical T-Tauri stars). Wanted to look at the ratio of CTTSs with respect to WTTSs.

Introduction:

Collect and Collapse Process:



http://media.eurekalert.org/release_graphics/AA110805_1.jpg

What causes the HII region to expand? I have not found any explanation for this.

Radiation Driven Implosion:

Evidence:

- Should produce an uneven density distribution which causes the bright rims.

Data Obtained:

BRC 27: 2MASS J, H, K; IRAC Mid-IR; BVI_c

BRC 38: 2MASS J, H, K; IRAC Mid-IR; BVI_c

Questions: EW of Hα? 4th line up from the bottom in abstract. Also referred to in conclusion.

Stellar Inventory:

Table 4: YSO Candidates' color, age, magnitude, and mass (pg. 10)

- BRC 27: 34 YSOs
- BRC 38: 18 YSOs

Number of Stars Inside BRC 27

- 15

Number of Stars Outside BRC 27

- 14

Number of Stars Inside BRC 38

- 7

Number of Stars Outside BRC 38

- 4

Conclusions:

The ages of the YSOs were calculated using color-magnitude diagrams. Compared ages of stars inside and outside of the rims to see if there was an age difference. All BRCs (except 27, of course), showed an age gradient. Found that WTTSs are generally older than CTTSs, which suggests that CTTSs evolve into WTTSs.